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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/782,337	02/13/2001	Natarajan S. Ramesh	CSAC-0009	9820

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EXAMINER

ROCHE, LEANNA M

ART UNIT	PAPER NUMBER
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1771

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DATE MAILED: 11/05/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/782,337

Applicant(s)

RAMESH ET AL.

Examiner

Leanna Roche

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) 24-27 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☒ Claim(s) 14 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 February 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: .

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-23, drawn to a composite material, classified in class 428, subclass 304.4.
 - II. Claims 24-27, drawn to a method for making a composite material, classified in class 156, subclass 60.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions of Group II and Group I are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, the composite material can be made by multiple materially different processes such as by co-extrusion, heat lamination, or by the using intermediate layers of adhesive.
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
4. During a telephone conversation with Gary Levin on October 11, 2002 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-23. Affirmation of this election must be made by applicant in replying to this

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Office action. Claims 24-27 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

6. It is noted that should the claims of Group I be found allowable, the claims of Group II will be subject to rejoinder pursuant to the procedures set forth in the Official Gazette notice dated March 26, 1996 (1184 O.G. 86), wherein claims directed to the process of making or using a patentable product, previously withdrawn from consideration as a result of a restriction requirement, are subject to being rejoined and fully examined for patentability under 37 CFR 1.104.

Drawings

7. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: Figure 2 does not include reference signs 11 and 13. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

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Claim Objections

8. Claim 14 is objected to because of the following informalities: Claim 14 teaches "an orientation ratio of at least about 2". This phrase is objected to because ratios, by definition, are relationships between two or more things. In the instant case, Applicant has only provided one value, i.e. 2. The examiner suggests rewriting this ratio value as 2:1. Appropriate correction is required.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1-12 and 15-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akao (USPN 4469741) in view of Foster (USPN 5968630).

Akao is directed to the production of laminated sheets for use as construction materials, particularly floor materials. The sheets may be comprised of two thermoplastic resin film layers bonded via an adhesive layer to a central foam layer (see Example 1 and Figure 2). This reads on Applicant's polyolefin foam sheet having a first film adhered to a first surface of the foam sheet and having a second film adhered to a second surface of the foam sheet. The foam sheet of Akao may be comprised of a polyolefin-based resin such as polyethylene. The foam sheet of Akao has a thickness of 1 to 50 mm (0.039-1.97 inches). This reads on Applicant's foam thickness between

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0.001 and 2 inches. The film sheets of Akao may have thicknesses ranging from 15-100 microns (0.0006-0.004 inches). This reads on Applicant's first film thickness of less than 0.001 inches, Applicant's first film thickness between 0.0003 and 0.00075 inches, Applicant's second film thickness between 0.001 and 0.008 inches, and Applicant's second film thickness of about 0.002 inches. The film layers of Akao may be comprised of polyolefin films having various densities, particularly high-density polyethylene. The adhesive layers used to bond the film layers to the foam layer of Akao read on Applicant's bonding layer and may be comprised of various adhesives including low-density polyethylene or polypropylene and ethylene/vinyl acetate copolymer adhesives.

Akao does not specifically disclose a film sheet wherein at least one edge of the film extends beyond a corresponding edge of the foam sheet. Foster, however, is directed to a laminate film/foam flooring composition comprising a polyethylene film layer on a polyethylene foam layer wherein the film layer extends beyond one edge of the foam layer. Upon installation, one edge of one laminate strip of Foster overlies the extended edge of the film of another laminate strip in a manner that does not require tape to keep the strips from moving during installation. This results in more efficient installation, reduced labor costs, and more efficient vapor barrier properties. Therefore, it would have been obvious to the skilled artisan at the time this invention was made to combine the teachings of Akao and Foster, motivated by the desire provide a flooring material with efficient installation, reduced labor costs and improved vapor barrier.

With regard to Claims 3 and 4, Akao does not specifically teach the density value of the foamed polyethylene layer. Foster, however, teaches a polyethylene foam layer

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having a low-density within 1 to 5 lbs/ft³. The density of the foam layer of Foster is especially suited for use under laminate wood floors because it eliminates "pounding" from a person walking or standing on a floor while not compressing too much when a heavy load is applied to the floor. Therefore, it would have been obvious to the skilled artisan at the time this invention was made to use a low-density polyethylene foam sheet having a density within Applicant's claimed range, motivated by the desire to produce a flooring material for use under laminate wood floors which is efficient at eliminating "pounding" while preventing excess compression from heavy loads.

With regard to Claim 19, Akao discloses using films of polyethylene having various densities, but does not specifically disclose using low-density polyethylene. Foster teaches using low-density polyethylene films in their film/foam laminate flooring composite because the polyethylene film layer is used as a water vapor barrier layer, and low-density polyethylene provides a very low water vapor permeability rate of about 1.4 grams 24 hours/m²/mm thick/cm Hg at 25°C. Therefore, it would have been obvious to a person of ordinary skill in the art at the time this invention was made to use a polyethylene film having a low density, motivated by the desire to produce a film/foam laminate that has minimal water vapor permeability.

With regard to Claims 22 and 23, Akao does not disclose an adhesive layer along a portion of an edge of the second film that extends beyond the corresponding edge of the foam sheet and does not disclose a release liner applied to that adhesive layer. Foster, however, teaches applying a double-sided adhesive tape to the extended edge of the film sheet of their film/foam laminate to adhere adjacent film/foam laminate

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strips so that they are completely non-movable in relation to one another. Foster also discloses applying a removable layer to the top of the double-sided adhesive tape to prevent the film/foam laminate from sticking to itself during manufacture. It would have been obvious to the skilled artisan at the time this invention was made to combine the teachings of Akao and Foster, motivated by the desire to produce a flooring material which is easy to install, which reduces labor costs, which provides an improved vapor barrier, whose strips are non-movable after installation, and which does not stick to itself during manufacture.

11. Claims 1-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Foster (USPN 5968630) in view of Deibel et al. (USPN 6358599).

Foster is directed to a laminate film/foam flooring composition comprising a low density polyethylene film layer on a low density polyethylene foam layer wherein the film layer extends beyond one edge of the foam layer. This reads on Applicant's polyolefin foam sheet and Applicant's second film adhered to a surface of the foam sheet and extending beyond a corresponding edge of the foam sheet. The foam layer of Foster has a low density of about 1 to 5 lbs/ft³. The low density polyethylene film of Foster may be about 0.001 to 0.01 inches. This reads on Applicant's 0.001-0.008 inches and Applicant's 0.002 inches. The polyethylene film and polyethylene foam of Foster are bonded together by a low density polyethylene adhesive layer. Foster also teaches applying a double-sided adhesive tape to the extended edge of the film sheet of their film/foam laminate to adhere adjacent film/foam laminate strips so that they are

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completely non-movable in relation to one another. Foster also discloses applying a removable layer to the top of the double-sided adhesive tape to prevent the film/foam laminate from sticking to itself during manufacture.

Foster does not disclose a first film adhered to a first surface of the foam sheet, the first film being comprised of a polyolefin, polyethylene or various other polyolefin type compounds, the first film also having a bonding layer thereon. Deibel, however, teaches laminated insulating foam boards that may be used in floor construction (column 9, lines 20-25). Deibel describes laminated foam insulation boards comprised of a panel of a plastic foam material and first and second thermoplastic facers adhered to the surfaces of the panel (column 4, lines 4-10). Deibel discloses facer films having thicknesses within Applicant's claimed range of less than 0.001 inches and 0.003 to 0.00075 inches (column 6, lines 1-3). The facer layers of Deibel are applied to the foam board with an adhesive such as ethylene/vinyl acetate. Deibel states that suitable films include biaxially oriented polyolefin (polypropylene or polyethylene) films because biaxially oriented polyolefin films provide laminated insulated foam boards with enhanced strength and resistance to bending and breaking (column 2, lines 58-61). It would have been obvious to the skilled artisan at the time this invention was made to combine the teachings of Foster and Deibel to produce a flooring laminate having a first biaxially oriented film adhesively bonded to a first surface of the foam, motivated by the desire to produce a laminate composite with enhanced strength and resistance to bending and breaking.

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With regard to Claim 14, neither Foster nor Deibel disclose a first film having an orientation ratio of at least two in both orientation directions. It would have been obvious to one having ordinary skill in the art at the time this invention was made to determine the optimum orientation ratio value of the first film layer, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art (*In re Aller*, 105 USPQ 233). In the present case, it would have been obvious to stretch the first film layer of Foster in view of Deibel to an orientation ratio of at least about two in each stretch direction because it is well-known in the art of biaxially oriented films that orientation ratios in the range of 1.5 to 4.0 are generally considered most desirable for materials such as polypropylene and result in films with excellent strength and toughness. See USPN 4874657, column 6, lines 7-9 and column 7, lines 7-9.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Lo et al. (USPN 4874657) teaches orientation ratios of greater than 2:1. Bussey et al. (USPN 5617687) teaches insulation laminates comprising foam/film composites with an extended film edge. Kelch et al. (USPN 5695870) is related to Deibel et al. (USPN 6358599).

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Contact Information


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leanna Roche whose telephone number is 703-308-6549. The examiner can normally be reached on Monday through Friday from 8:30 am to 6:00 pm (with alternate Mondays off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on 703-308-2414. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



lmr
October 24, 2002



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